SE555-F, T, V·NE555-F, T, V

FEATURES

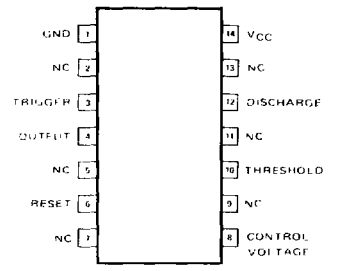
- TIMING FROM MICROSECONDS THROUGH HOURS
- OPERATES IN BOTH ASTABLE AND MONOSTABLE MODES
- ADJUSTABLE DUTY CYCLE
- HIGH CURRENT OUTPUT CAN SOURCE OR SINK 200mA
- OUTPUT CAN DRIVE TTL
- TEMPERATURE STABILITY OF 0.005% PER °C
- NORMALLY ON AND NORMALLY OFF OUTPUT

APPLICATIONS

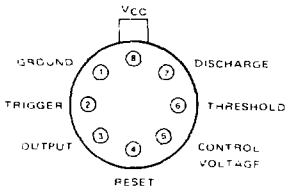
PRECISION TIMING
PULSE GENERATION
SEQUENTIAL TIMING
TIME DELAY GENERATION
PULSE WIDTH MODULATION
PULSE POSITION MODULATION
MISSING PULSE DETECTOR

PIN CONFIGURATION

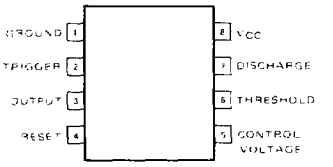
F PACKAGE



T PACKAGE



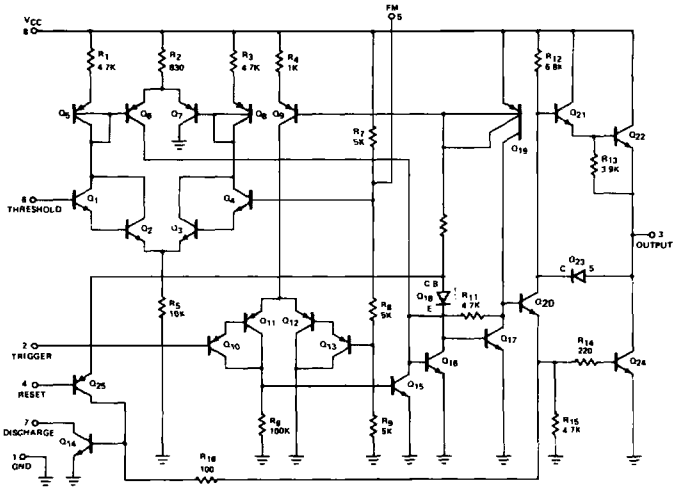
V PACKAGE



ABSOLUTE MAXIMUM RATINGS

Supply Voltage	
SE555	+18V
NE555	+16V
Power Dissipation	600 mW
Operating Temperature Range	
NE555	0°C to +70°C
SE555	−55°C to +125°C
Storage Temperature Range	−65°C to +150°C
Lead Temperature (Soldering, 60 seconds)	+300°C

EQUIVALENT CIRCUIT



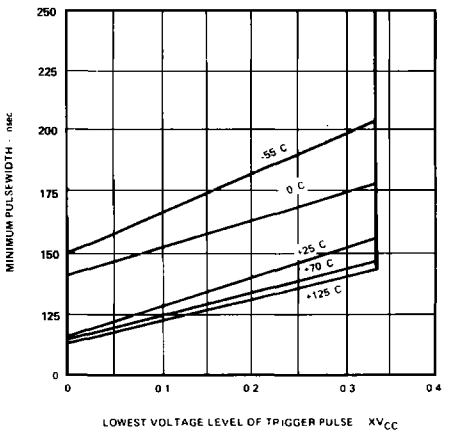
ELECTRICAL CHARACTERISTICS TA = 25°C, VCC = +5V to +15 unless otherwise specified

PARAMETER	TEST CONDITIONS	SE 555			NE 555			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
Supply Voltage		4.5		18	4.5		16	V
Supply Current	VCC = 5V RL = ∞		3	5		3	6	mA
	VCC = 15V RL = ∞		10	12		10	15	mA
	Low State, Note 1							
Timing Error (Monostable)	RA = 2KΩ to 100 KΩ							
Initial Accuracy	C = 0.1μF Note 2		0.5	2		1		%
Drift with Temperature			30	100		50		ppm/°C
Drift with Supply Voltage			0.05	0.2		0.1		%/Volt
Timing Error (Astable)	RA, RB = 2KΩ to 100 KΩ							
Initial Accuracy	C = 0.1μF Note 2							
Drift with Temperature			1.5			2.25		%
Drift with Supply			90			150		ppm/°C
Voltage			0.15			0.3		%/Volt
Threshold Voltage			2/3			2/3		X VCC
Trigger Voltage	VCC = 15V	4.8	5	5.2		5		V
	VCC = 5V	1.45	1.67	1.9		1.67		V
Trigger Current			2.0			2.0		μA
Reset Voltage (Note 4)		0.4	0.7	1.0	0.4	0.7	1.0	V
Reset Current			0.1			0.1		mA
Threshold Current	Note 3		0.1	.25		0.1	.25	μA
Control Voltage Level	VCC = 15V	9.6	10	10.4	9	10	11	V
	VCC = 5V	2.9	3.33	3.8	2.6	3.33	4	V
Output Voltage (low)	VCC = 15V							
	ISINK = 10mA		0.1	0.15		0.1	.25	V
	ISINK = 50mA		0.4	0.5		0.4	.75	V
	ISINK = 100mA		2.0	2.2		2.0	2.5	V
	ISINK = 200mA		2.5			2.5		
	VCC = 5V							
	ISINK = 8mA		0.1	0.25				V
	ISINK = 5mA					.25	.35	
Output Voltage (High)								
	ISOURCE = 200mA		12.5			12.5		
	VCC = 15V							
	ISOURCE = 100mA							
	VCC = 15V	13.0	13.3		12.75	13.3		V
	VCC = 5V	3.0	3.3		2.75	3.3		V
Rise Time of Output			100			100		nsec
Fall Time of Output			100			100		nsec
Discharge Leakage Current			20	100		20	100	NA

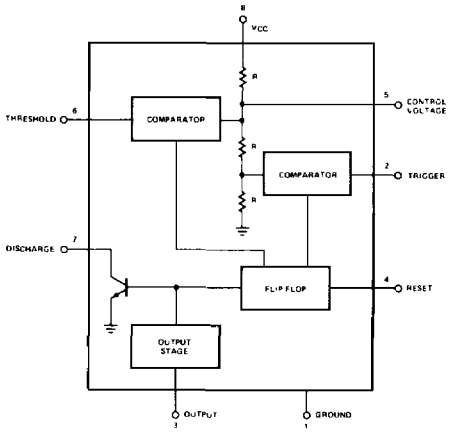
NOTES
1. Supply Current when output high typically 1mA less.
2. Tested at VCC = 5V and VCC = 15V
3. This will determine the maximum value of RA + RBF for 15V operation, the max total R = 20 megohm, and for 5V operation, the max total R = 6.8 megohm.
4. Specified with trigger input high.

TYPICAL CHARACTERISTICS

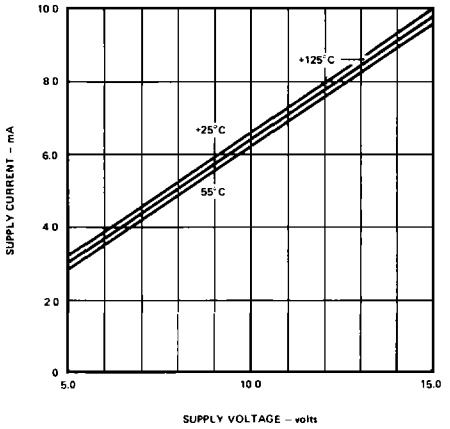
MINIMUM PULSE WIDTH REQUIRED FOR TRIGGERING



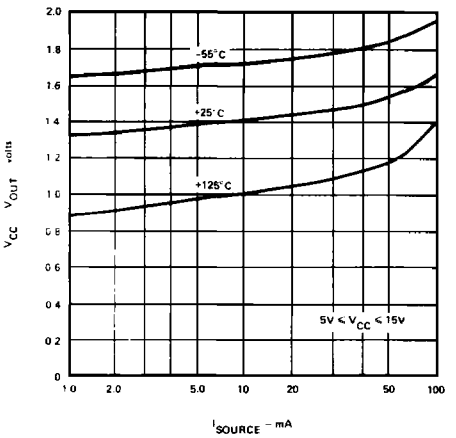
BLOCK DIAGRAM



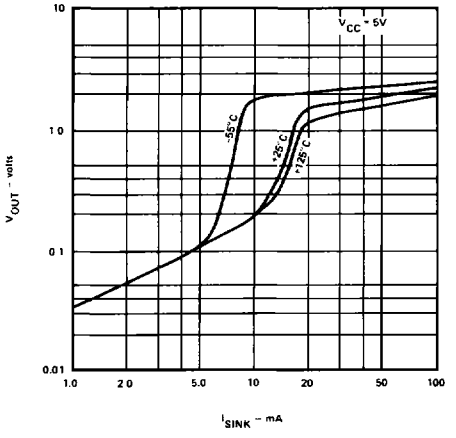
SUPPLY CURRENT vs SUPPLY VOLTAGE



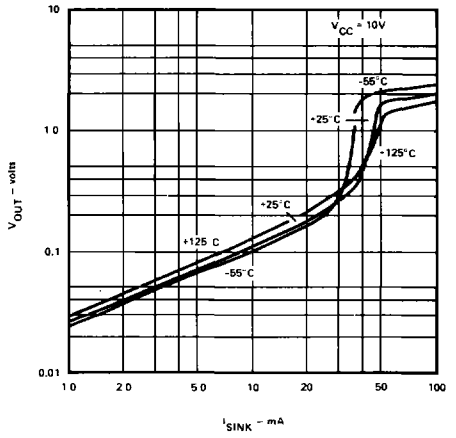
HIGH OUTPUT VOLTAGE DROP vs OUTPUT SOURCE CURRENT



LOW OUTPUT VOLTAGE vs OUTPUT SINK CURRENT

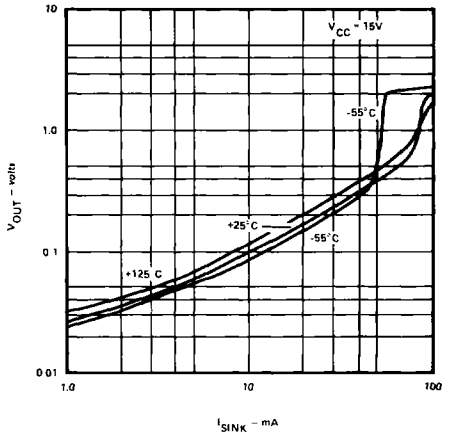


LOW OUTPUT VOLTAGE vs OUTPUT SINK CURRENT

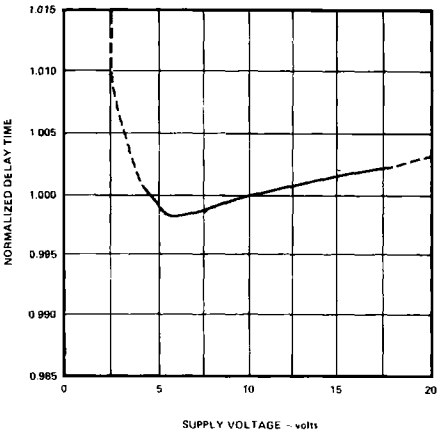


TYPICAL CHARACTERISTICS (CONT'D)

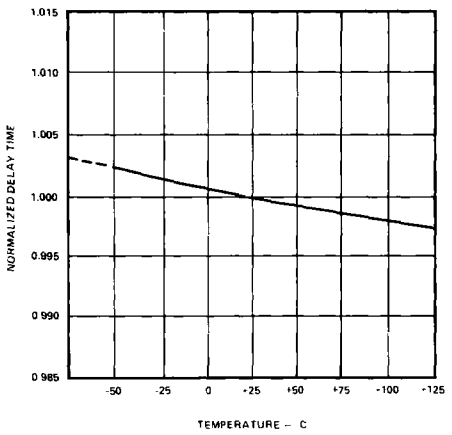
LOW OUTPUT VOLTAGE vs OUTPUT SINK CURRENT



DELAY TIME vs SUPPLY VOLTAGE



DELAY TIME vs TEMPERATURE



PROPAGATION DELAY vs VOLTAGE LEVEL OF TRIGGER PULSE